

IN THE CLAIMS

Please cancel claim 15.

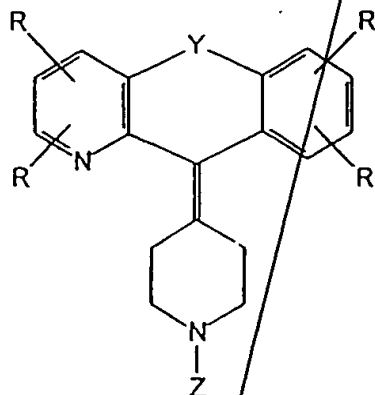
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Please amend the following claims

1. A process for creating 1,4-disubstituted piperidine compounds of formula (I)



(I)

in which

R wherein each said R is a member independently and separately selected from the group consisting of hydrogen, fluorine, chlorine, bromine, straight-chain (C<sub>1</sub>-C<sub>5</sub>) - alkyl, branched (C<sub>1</sub>-C<sub>5</sub>)-alkyl, straight-chain (C<sub>2</sub>-C<sub>5</sub>) - alkenyl, and, branched (C<sub>2</sub>-C<sub>5</sub>) - alkenyl;

Y is an element selected from the group consisting of -(CH<sub>2</sub>)<sub>0</sub>-, -(CH<sub>2</sub>)<sub>1</sub>-, -(CH<sub>2</sub>)<sub>2</sub>-, -(CH<sub>2</sub>)<sub>3</sub>-, oxygen, sulfur, -CH<sub>2</sub>-O-, -O-CH<sub>2</sub>-, -CH<sub>2</sub>-, and -S-CH<sub>2</sub>-;

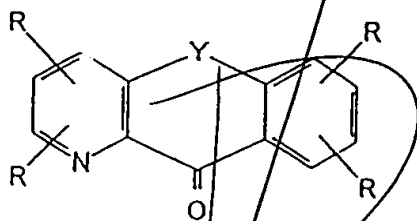
*sub  
C1/Cnt*

Z wherein each said Z is a member selected from the group consisting of hydrogen,  $-C(O)R^1$ ,  $-C(O)OR^1$ ,  $-OS(O)R^2$ , straight-chain  $(C_1-C_5)$ -alkyl, branched  $(C_1-C_5)$ -alkyl, straight-chain  $(C_2-C_5)$ -alkenyl, and branched  $(C_2-C_5)$ -alkenyl;

$R^1$  wherein each  $R^1$  is an element selected from the group consisting of straight-chain  $(C_1-C_5)$ -alkyl, branched  $(C_1-C_5)$ -alkyl, straight-chain  $(C_2-C_5)$ -alkenyl, branched  $(C_2-C_5)$ -alkenyl;

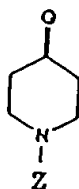
$R^2$  wherein each  $R^2$  is an element selected from the group consisting of straight-chain  $(C_1-C_5)$ -alkyl, branched  $(C_1-C_5)$ -alkyl, straight-chain  $(C_2-C_5)$ -alkenyl, branched  $(C_2-C_5)$ -alkenyl;

wherein a compound of formula (II)



(II)

in which the substituents R and Y have the meanings cited above, with a compound of formula (III)



(III)

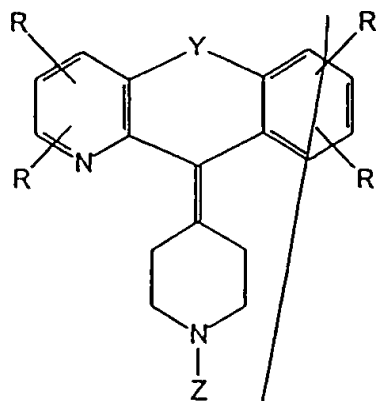
in which Z has the meaning specified above, is brought to react in a single process step by means of reductive dimerization

(i) in the presence of a finely dispersed metal compound, wherein said metal compound is an element selected from the group consisting of the IVth, Vth, VIth subgroup of the periodic table of elements and low-valent oxidation stage metal compound of the IVth, Vth, VIth subgroup of the periodic table of elements;

(ii) wherein said finely dispersed metal is produced in situ by means of a reducing agent wherein said reducing agent is selected from a group consisting of alkali metals, metals of the II<sup>nd</sup> main group, metals of the II<sup>nd</sup> subgroup, alloys of the metals of the II<sup>nd</sup> main group, alloys of the metals of the II<sup>nd</sup> subgroup, inclusion compounds of the metals of the II<sup>nd</sup> main group containing carbon, inclusion compounds of the metals of the II<sup>nd</sup> subgroup containing carbon, metal hydrides of the compounds of the metals of the II<sup>nd</sup> main group, metal hydrides of the compounds of the metals of the II<sup>nd</sup> subgroup, salts of naphthalides anions, and higher polycyclic aromatics; and,

(iii) in the presence of an inert solvent, wherein said inert solvent is chosen from a group consisting of inert ethers, nitrogen-containing unsaturated hetero-aromatics and tertiary amines.

2. A process for creating 1,4-disubstituted piperidine compounds of formula (I)



(II)

in which

R wherein each said R is a member independently and separately selected from the group consisting of hydrogen, fluorine, chlorine, bromine, methyl, trifluoromethyl,

straight chain (C<sub>1</sub>-C<sub>5</sub>) - alkyl, straight chain (C<sub>1</sub>-C<sub>5</sub>)-alkyl substituted with fluorine, straight chain (C<sub>1</sub>-C<sub>5</sub>) - alkyl substituted with chlorine, straight chain (C<sub>1</sub>-C<sub>5</sub>) - alkyl substituted with bromine,

branched (C<sub>1</sub>-C<sub>5</sub>) - alkyl, branched (C<sub>1</sub>-C<sub>5</sub>)-alkyl substituted with fluorine, branched (C<sub>1</sub>-C<sub>5</sub>) - alkyl substituted with chlorine, branched (C<sub>1</sub>-C<sub>5</sub>) - alkyl substituted with bromine,

straight-chain (C<sub>2</sub>-C<sub>5</sub>) - alkenyl, straight-chain (C<sub>2</sub>-C<sub>5</sub>) - alkenyl substituted with fluorine, straight-chain (C<sub>2</sub>-C<sub>5</sub>) - alkenyl substituted with chlorine, straight-chain (C<sub>2</sub>-C<sub>5</sub>) - alkenyl substituted with bromine,

branched (C<sub>2</sub>-C<sub>5</sub>) – alkenyl; branched (C<sub>2</sub>-C<sub>5</sub>) – alkenyl substituted with fluorine, branched (C<sub>2</sub>-C<sub>5</sub>) – alkenyl substituted with chlorine, and branched (C<sub>2</sub>-C<sub>5</sub>) – alkenyl substituted with bromine;

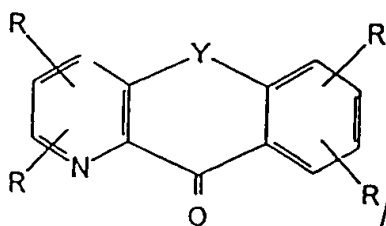
Y is an element selected from the group consisting of -(CH<sub>2</sub>)<sub>0</sub>-, -(CH<sub>2</sub>)<sub>1</sub>-, -(CH<sub>2</sub>)<sub>2</sub>-, -(CH<sub>2</sub>)<sub>3</sub>-, oxygen, sulfur, -CH<sub>2</sub>-O-, -O-CH<sub>2</sub>-, -CH<sub>2</sub>-, and -S-CH<sub>2</sub>-;

*sub C1 cont*  
Z wherein each said Z is a member selected from the group consisting of hydrogen, -C(O)R<sup>1</sup>, -C(O)OR<sup>1</sup>, -OS(O)R<sup>2</sup>, -C(O)O-C<sub>2</sub>H<sub>5</sub>, straight-chain (C<sub>1</sub>-C<sub>5</sub>)– alkyl, branched (C<sub>1</sub>-C<sub>5</sub>) – alkyl, straight-chain (C<sub>2</sub>-C<sub>5</sub>) – alkenyl, and branched (C<sub>2</sub>-C<sub>5</sub>) – alkenyl, wherein R<sup>1</sup> is herein defined;

R<sup>1</sup> wherein each R<sup>1</sup> is an element selected from the group consisting of straight-chain (C<sub>1</sub>-C<sub>5</sub>)– alkyl, branched (C<sub>1</sub>-C<sub>5</sub>) – alkyl, straight-chain (C<sub>2</sub>-C<sub>5</sub>) – alkenyl, and branched (C<sub>2</sub>-C<sub>5</sub>) – alkenyl;

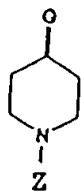
R<sup>2</sup> wherein each R<sup>2</sup> is an element selected from the group consisting of straight-chain (C<sub>1</sub>-C<sub>5</sub>)– alkyl, branched (C<sub>1</sub>-C<sub>5</sub>) – alkyl, straight-chain (C<sub>2</sub>-C<sub>5</sub>) – alkenyl, branched (C<sub>2</sub>-C<sub>5</sub>) – alkenyl, benzyl, and dimethyl amino;

wherein a compound of formula (II)



(II)

in which the substituents R and Y of Compound (II) have the meanings cited above, and is brought into contact with a compound of formula (III)



(III)

in which Z has the meaning specified above, is brought to react in a single process step by means of reductive dimerization

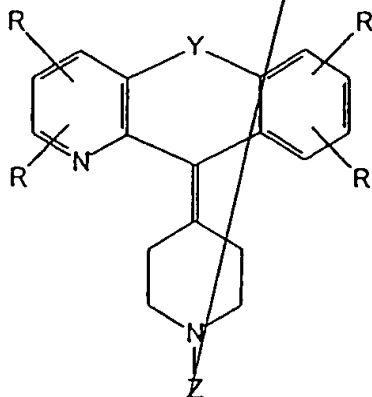
(i) in the presence of a finely dispersed metal compound, wherein said metal compound is an element selected from the group consisting of chloride of titanium, chloride of zirconium, chloride of vanadium, chloride of molybdenum, chloride of tungsten, and a chloride of uranium;

(ii) wherein said finely dispersed metal is produced in situ by means of a reducing agent wherein the reducing agent is chosen from the group consisting of alkali metals, metals of the II<sup>nd</sup> main group of the periodic table, alloys of the metals of the II<sup>nd</sup> main group, inclusion compounds of metals of the II<sup>nd</sup> main group with carbon, higher polycyclic aromatics; and

SUB  
C/CMT

(iii) in the presence of an inert solvent, wherein the solvent is chosen from a group consisting of inert ethers, nitrogen-containing unsaturated hetero-aromatics or the tertiary amines.

3. A process for creating 1,4-disubstituted piperidine compounds of formula (I)



(I)

in which

R wherein each said R is a member independently and separately selected from the group consisting of hydrogen, fluorine, chlorine, bromine, methyl, trifluoromethyl,

straight chain (C<sub>1</sub>-C<sub>5</sub>) - alkyl, straight chain (C<sub>1</sub>-C<sub>5</sub>)-alkyl substituted with fluorine, straight chain (C<sub>1</sub>-C<sub>5</sub>) - alkyl substituted with chlorine, straight chain (C<sub>1</sub>-C<sub>5</sub>) - alkyl substituted with bromine,

branched (C<sub>1</sub>-C<sub>5</sub>) - alkyl, branched (C<sub>1</sub>-C<sub>5</sub>)-alkyl substituted with fluorine, branched (C<sub>1</sub>-C<sub>5</sub>) - alkyl substituted with chlorine, branched (C<sub>1</sub>-C<sub>5</sub>) - alkyl substituted with bromine,

straight-chain (C<sub>2</sub>-C<sub>5</sub>) – alkenyl, straight-chain (C<sub>2</sub>-C<sub>5</sub>) – alkenyl substituted with fluorine, straight-chain (C<sub>2</sub>-C<sub>5</sub>) – alkenyl substituted with chlorine, straight-chain (C<sub>2</sub>-C<sub>5</sub>) – alkenyl substituted with bromine,

branched (C<sub>2</sub>-C<sub>5</sub>) – alkenyl; branched (C<sub>2</sub>-C<sub>5</sub>) – alkenyl substituted with fluorine, branched (C<sub>2</sub>-C<sub>5</sub>) – alkenyl substituted with chlorine, and branched (C<sub>2</sub>-C<sub>5</sub>) – alkenyl substituted with bromine;

*Cont*  
Y is an element selected from the group consisting of -(CH<sub>2</sub>)<sub>0</sub>-, -(CH<sub>2</sub>)<sub>1</sub>-, -(CH<sub>2</sub>)<sub>2</sub>-, -(CH<sub>2</sub>)<sub>3</sub>-, oxygen, sulfur, -CH<sub>2</sub>-O-, -O-CH<sub>2</sub>-, -CH<sub>2</sub>-, and -S-CH<sub>2</sub>-;

Z wherein each said Z is a member selected from the group consisting of hydrogen, -C(O)R<sup>1</sup>, -C(O)OR<sup>1</sup>, -OS(O)R<sup>2</sup>, straight-chain (C<sub>1</sub>-C<sub>5</sub>) – alkyl, branched (C<sub>1</sub>-C<sub>5</sub>) – alkyl, straight-chain (C<sub>2</sub>-C<sub>5</sub>) – alkenyl, and branched (C<sub>2</sub>-C<sub>5</sub>) – alkenyl, wherein R<sup>1</sup> and R<sup>2</sup> are herein defined;

R<sup>1</sup> wherein each R<sup>1</sup> is an element individually selected from the group consisting of straight chain (C<sub>1</sub>-C<sub>5</sub>) – alkyl, straight chain (C<sub>1</sub>-C<sub>5</sub>)-alkyl substituted with fluorine, straight chain (C<sub>1</sub>-C<sub>5</sub>) – alkyl substituted with chlorine, straight chain (C<sub>1</sub>-C<sub>5</sub>) – alkyl substituted with bromine, straight chain (C<sub>1</sub>-C<sub>5</sub>) – alkyl substituted with a (C<sub>1</sub>-C<sub>5</sub>) – alkyl ether group,

branched (C<sub>1</sub>-C<sub>5</sub>) – alkyl, branched (C<sub>1</sub>-C<sub>5</sub>)-alkyl substituted with fluorine, branched (C<sub>1</sub>-C<sub>5</sub>) – alkyl substituted with chlorine, branched (C<sub>1</sub>-C<sub>5</sub>) – alkyl



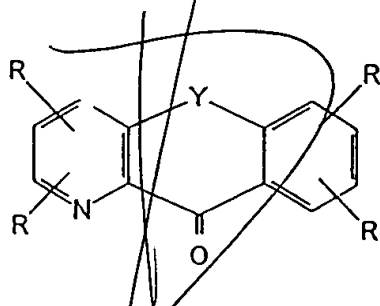
substituted with bromine, branched (C<sub>1</sub>-C<sub>5</sub>) - alkyl substituted with a (C<sub>1</sub>-C<sub>5</sub>) - alkyl ether group,

straight-chain (C<sub>2</sub>-C<sub>5</sub>) - alkenyl, straight-chain (C<sub>2</sub>-C<sub>5</sub>) - alkenyl substituted with fluorine, straight-chain (C<sub>2</sub>-C<sub>5</sub>) - alkenyl substituted with chlorine, straight-chain (C<sub>2</sub>-C<sub>5</sub>) - alkenyl substituted with bromine,

branched (C<sub>2</sub>-C<sub>5</sub>) - alkenyl; branched (C<sub>2</sub>-C<sub>5</sub>) - alkenyl substituted with fluorine, branched (C<sub>2</sub>-C<sub>5</sub>) - alkenyl substituted with chlorine, and branched (C<sub>2</sub>-C<sub>5</sub>) - alkenyl substituted with bromine;

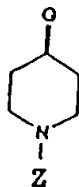
R<sup>2</sup> wherein each R<sup>2</sup> is an element selected from the group consisting of straight-chain (C<sub>1</sub>-C<sub>5</sub>) - alkyl, branched (C<sub>1</sub>-C<sub>5</sub>) - alkyl, straight-chain (C<sub>2</sub>-C<sub>5</sub>) - alkenyl, branched (C<sub>2</sub>-C<sub>5</sub>) - alkenyl, benzyl, ethyl, and dimethyl amino;

wherein a compound of formula (II)



(II)

in which the substituents R and Y of Compound (II) have the meanings cited above, and is brought into contact with a compound of formula (III)



(III)

in which Z has the meaning specified above, is brought to react in a single process step by means of reductive dimerization

(i) in the presence of a finely dispersed metal compound, wherein said metal compound is an element selected from the group consisting of chloride of titanium, chloride of zirconium, chloride of vanadium, chloride of molybdenum, chloride of tungsten, and a chloride of uranium;

(ii) wherein said finely dispersed metal is produced in situ by means of a reducing agent wherein the reducing agent being chosen from the group consisting of zinc, lithium, sodium, potassium, magnesium, calcium, zinc alloys, lithium alloys, sodium alloys, potassium alloys, magnesium alloys, calcium alloys, calcium hydride, sodium boron hydride, and lithium aluminum hydride; and,

(iii) in the presence of an inert solvent, wherein the solvent is chosen from a group consisting of 1,4-dioxane, 1,2-dimethoxyethane, tetrahydrofuran, diethylene glycol dimethylether, tert-butyl-methyl-ether, pyridine and triethyl amine.

c2 6 The process in accordance with claim 1, wherein the compound of formula (1) only has a single substituent R, which is different from hydrogen.

7. The process in accordance with claim 2, wherein

Y means  $\text{CH}_2\text{-CH}_2\text{-}$ ;

R<sup>1</sup> is selected from a group consisting of (C<sub>1</sub>-C<sub>5</sub>)-alkyl;

R<sup>2</sup> is selected from a group consisting of (C<sub>1</sub>-C<sub>5</sub>)-alkyl, benzyl, and dimethyl amino;

Z is selected from the group consisting of -C(O)R<sup>1</sup>, -C(O)OR<sup>1</sup>, and, -C(O)-C<sub>2</sub>H<sub>5</sub> wherein R<sup>1</sup> is defined herein.

C2x  
8. The process according to claim 2 wherein each of said R is a member independently and separately selected from the group consisting of hydrogen, fluorine, chlorine, bromine, methyl, and trifluoromethyl.

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C3  
9. The process according to claim 1 wherein each of said R is a member independently and separately selected from the group consisting of hydrogen, fluorine, and chlorine.

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10. The process according to claim 3 wherein said metal compound is titanium tetrachloride, wherein a low-valent stage of titanium tetrachloride is made in situ by said reducing agent.

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C4  
11. The process according to claim 1 wherein said reducing agent is selected from the group consisting of zinc, lithium, sodium, potassium, magnesium, calcium, zinc alloys, lithium alloys, sodium alloys, potassium alloys, magnesium alloys, calcium alloys, calcium hydride, sodium boron hydride, and lithium aluminum hydride.

C4 cont  
12. The process according to claim 1 wherein said reducing agent is selected from the group consisting of an alkali alloy, metal of the II<sup>nd</sup> main group, II<sup>nd</sup> subgroup metal, zinc, zinc-copper alloy, and a potassium-graphite inclusion.

13. The process according to claim 1 wherein said solvent is selected from the group consisting of 1,4-dioxane, 1,2-dimethoxyethane, tetrahydrofurane, diethylene glycol dimethylether, tert-butyl-methyl-ether, pyridine and triethyl amine.

14. The process according to claim 1 wherein the compound 4-(8-chloro-5, 6-dihydro-11*H*-benzo-[5,6]-cyclohepta-[1,2-b]pyridine-11-ylidene)-1-piperidine carboxylic acid ethyl-ester is produced.

Please add the following new claims:

C5  
16. The process according to claim 2 wherein the compound 4-(8-chloro-5, 6-dihydro-11*H*-benzo-[5,6]-cyclohepta-[1,2-b]pyridine-11-ylidene)-1-piperidine carboxylic acid ethyl-ester is produced.

17. The process according to claim 3 wherein the compound 4-(8-chloro-5, 6-dihydro-11*H*-benzo-[5,6]-cyclohepta-[1,2-b]pyridine-11-ylidene)-1-piperidine carboxylic acid ethyl-ester is produced.

18. The process according to claim 7 wherein Z is  $-\text{C}(\text{O})-\text{C}_2\text{H}_5$ .

19. The process according to claim 7 wherein  $\text{R}^1$  the alkyl selected is ethyl.

C5 cont  
20. The process according to claim 3 wherein each of said R is a member independently and separately selected from the group consisting of hydrogen, fluorine, and chlorine.

21. The process according to claim 1 wherein said metal compound is a halogen compound.